

PATENT RESPONSE

AMENDED CLAIMS

1. (currently amended) A lenticular bar code image, comprising:  
a lenticular lens having a front surface including a plurality of lenticules oriented along an axial direction and a back surface opposite the front surface; and  
an image including a bar code symbol having bars joined to the back surface of the lenticular lens, the lenticular lens and image in overlay relationship with one another such that a line parallel to the axial direction and at least one of the bars diverge from a common point to define a lenticular bar code angle the image including a bar code symbol having bars;  
~~wherein the lenticular lens and the image are in overlay relationship with one another such that a lenticular bar code angle is formed between the bars of the bar code symbol and the lenticules of the lenticular lens.~~
2. (original) The lenticular bar code image of Claim 1 wherein the lenticular bar code angle is in a range from 0 to 360 degrees.
3. (original) The lenticular bar code image of Claim 1 wherein the lenticular bar code angle is in a range from 0 to 90 degrees.
4. (currently amended) The lenticular bar code image of Claim 1 wherein the bars ~~of the bar code symbol~~ are skewed with respect to the lenticules ~~of the lenticular lens~~.
5. (currently amended) The lenticular bar code image of Claim 1 wherein the bars ~~of the bar code symbol~~ are perpendicular to the lenticules ~~of the lenticular lens~~.
6. (currently amended) The lenticular bar code image of Claim 1 wherein the bars ~~of the bar code symbol~~ are not aligned with the lenticules ~~of the lenticular lens~~.
7. (currently amended) The lenticular bar code image of Claim 1 wherein the bar code symbol is readable through the lenticules ~~of the lenticular lens~~ by a bar code reader.

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8. (original) The lenticular bar code image of Claim 7 wherein the bar code reader is a scanner.

9. (original) The lenticular bar code image of Claim 7 wherein the bar code reader is one of: a contact reader, a moving beam scanner, a fixed beam scanner, and a hand-held scanner.

10. (currently amended) The lenticular bar code image of Claim 7 wherein the bar code symbol has an American National Standards Institute Standard X3.182-1990 readability grade of at least ~~a-C~~ 2.0.

11. (original) The lenticular bar code image of Claim 1 wherein the bar code symbol is a Universal Product Code (UPC) symbology.

12. (currently amended) The lenticular bar code image of Claim 1 wherein the lenticules ~~of lenticular lens~~ have a width of less than about 0.006667 inches.

13. (currently amended) The lenticular bar code image of Claim 12 wherein the lenticules ~~of lenticular lens~~ have a focal length and a gauge thickness and wherein the focal length is substantially equal to the gauge thickness.

14. (original) The lenticular bar code image of Claim 13 wherein the gauge thickness is less than about 10 mils.

15. (original) The lenticular bar code image of Claim 1 wherein the lenticular lens includes at least 150 lenticules per inch (LPI).

16. (original) The lenticular bar code image of Claim 1 wherein the bar code symbol is one of a Code 39 symbology, an Interleaved 2 of 5 symbology, a Codabar symbology, a Code 128 symbology, a Code 93 symbology, and a Postnet symbology.

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17. (currently amended) The lenticular bar code image of Claim 1 wherein at least one of the plurality of lenticules overlays more than ~~one bar of the bar code symbol~~ one of the bars.

18. (currently amended) The lenticular bar code image of Claim 1 wherein the image is printed directly to the flat back surface ~~of the lenticular lens~~.

19. (original) The lenticular bar code image of Claim 1 wherein the image is printed onto the lenticular lens by one of: sheet-fed printing, web-offset printing, flexographic printing, gravure printing, digital printing, and electronic deposition.

20. (original) The lenticular bar code image of Claim 1 wherein the image is not printed onto the lenticular lens by a photographic printing process.

21. (original) The lenticular bar code image of Claim 1 wherein the image is printed onto the lenticular lens by one of: sheet-fed printing, web-offset printing, flexographic printing, gravure printing, digital printing, inkjet and electronic deposition.

22. (original) The lenticular bar code image of Claim 1 further comprising a substrate such that the image is disposed between the lenticular lens and the substrate.

23. (currently amended) The lenticular bar code image of Claim 22 further wherein the image is printed to the substrate.

24. (original) The lenticular bar code image of Claim 23 wherein the image is printed onto the substrate by one of: sheet-fed, web-offset, flexographic, gravure, digital printing, inkjet and electronic deposition.

25. (currently amended) The lenticular bar code image of Claim 1 wherein the lenticular lens comprises an ultraviolet curable resin and a plastic material selected from the group consisting of: polyester vinyl, polycarbonate, polyvinyl chloride, polyethylene terephthalate, and amorphous polyethylene terephthalate.

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26. (currently amended) The lenticular bar code image of Claim 1 wherein the lenticular lens comprises an ultraviolet curable resin.

27. (currently amended) The lenticular bar code image of Claim 1 wherein the lenticular lens comprises thermoplastic material.

28. (currently amended) The lenticular bar code image of Claim 1 wherein the lenticular lens comprises plastic material.

29. (currently amended) The lenticular bar code image of Claim 1 wherein the lenticular lens comprises electron beam, curable resin material.

30. (currently amended) The lenticular bar code image of Claim 1 wherein the lenticular bar code image is applied to at least one of: a package, a cup, a container, a product, and a label.

31. (currently amended) A lenticular bar code image, comprising:  
a lenticular lens having a front surface including a plurality of lenticules oriented along an axial direction and a flat back surface opposite the front surface; and  
an image including a Universal Product Code bar code symbol having bars joined to the flat back surface of the lenticular lens, the lenticular lens and image in overlay relationship with one another such that a line parallel to the axial direction and at least one of the bars diverge from a common point to define a lenticular bar code angle such that the bars are substantially perpendicular to the lenticules the image including a Universal Product Code bar code symbol having bars;

wherein the lenticular lens and the image are in overlay relationship with one another such that a lenticular bar code angle of is formed between the bars of the bar code symbol and the lenticules of the lenticular lens such that the bars are substantially perpendicular to the lenticules.

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32. (currently amended) A lenticular bar code image, comprising:

a lenticular lens having a front surface including a plurality of lenticules oriented along an axial direction and a flat back surface opposite the front surface; and

an image including a Universal Product Code bar code symbol having bars lithographically printed directly to the flat back surface of the lenticular lens, the lenticular lens and image in overlay relationship with one another such that a line parallel to the axial direction and at least one of the bars diverge from a common point to define a lenticular bar code angle such that the bars are substantially perpendicular to the lenticules; and the image including a Universal Product Code bar code symbol having bars;

~~wherein the lenticular lens and the image are in overlay relationship with one another such that a lenticular bar code angle of is formed between the bars of the bar code symbol and the lenticules of the lenticular lens such that the bars are substantially perpendicular to the lenticules; and~~

wherein the bar code symbol is readable through the lenticules of the lenticular lens by a bar code reader.

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33. (currently amended) A lenticular bar code image, comprising:

a lenticular lens having a front surface including a plurality of lenticules oriented along an axial direction and a flat back surface opposite the front surface; and

an image including a Universal Product Code bar code symbol having bars lithographically printed directly to the flat back surface of the lenticular lens, the lenticular lens and image in overlay relationship with one another such that a line parallel to the axial direction and at least one of the bars diverge from a common point to define a lenticular bar code angle such that the bars are substantially perpendicular to the lenticules; the image including a Universal Product Code bar code symbol having bars;

~~wherein the lenticular lens and the image are in overlay relationship with one another such that a lenticular bar code angle of is formed between the bars of the bar code symbol and the lenticules of the lenticular lens such that the bars are substantially perpendicular to the lenticules;~~

wherein the bar code symbol is readable through the lenticules ~~of the lenticular lens~~ by a bar code reader; and

wherein the bar code symbol remains substantially visible despite any movement of the lenticular bar code image.

34. (currently amended) A label, comprising:

a label substrate; and

a lenticular bar code image attached to the label substrate, the lenticular bar code image comprising:

a lenticular lens having a front surface including a plurality of lenticules oriented along an axial direction and a flat back surface opposite the front surface; and

an image including a bar code symbol having bars joined to the flat back surface of the lenticular lens, the lenticular lens and image in overlay relationship with one another such that a line parallel to the axial direction and at least one of the bars diverge from a common point to define a bar code rotation angle ~~the image including a bar code symbol having bars~~;

~~wherein the bar code symbol is rotated to define a bar code rotation angle between the bars of the bar code symbol and the lenticules of the lenticular lens.~~

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35. (currently amended) A container, comprising:  
a container substrate; and  
a lenticular bar code image attached to the container substrate, the lenticular bar code image comprising:

a lenticular lens having a front surface including a plurality of lenticules oriented along an axial direction and a flat back surface opposite the front surface; and

an image including a bar code symbol having bars joined to the flat back surface of the lenticular lens, the lenticular lens and image in overlay relationship with one another such that a line parallel to the axial direction and at least one of the bars diverge from a common point to define a bar code rotation angle the image including a bar code symbol having bars;

~~wherein the bar code symbol is rotated to define a bar code rotation angle between the bars of the bar code symbol and the lenticules of the lenticular lens.~~

36. (currently amended) A cup product, comprising:  
a cup product substrate; and  
a lenticular bar code image attached to the cup product substrate, the lenticular bar code image comprising:

a lenticular lens having a front surface including a plurality of lenticules oriented along an axial direction and a flat back surface opposite the front surface; and

an image including a bar code symbol having bars joined to the flat back surface of the lenticular lens, the lenticular lens and image in overlay relationship with one another such that a line parallel to the axial direction and at least one of the bars diverge from a common point to define a bar code rotation angle the image including a bar code symbol having bars;

~~wherein the bar code symbol is rotated to define a bar code rotation angle between the bars of the bar code symbol and the lenticules of the lenticular lens.~~

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37. (currently amended) A package, comprising:  
a package substrate; and  
a lenticular bar code image attached to the package substrate, the lenticular bar code image comprising:

a lenticular lens having a front surface including a plurality of lenticules oriented along an axial direction and a flat back surface opposite the front surface; and  
an image including a bar code symbol having bars joined to the flat back surface of the lenticular lens, the lenticular lens and image in overlay relationship with one another such that a line parallel to the axial direction and at least one of the bars diverge from a common point to define a bar code rotation angle the image including a bar code symbol having bars;  
~~wherein the bar code symbol is rotated to define a bar code rotation angle between the bars of the bar code symbol and the lenticules of the lenticular lens.~~

38. (currently amended) A method of making a lenticular bar code image, the method comprising:

providing a lenticular lens having a front surface including a plurality of lenticules oriented along an axial direction and a flat back surface opposite the front surface;  
providing a lenticular bar code image including a bar code symbol having bars, the image including a bar code symbol having bars; and  
joining the lenticular bar code image to the flat back surface of the lenticular lens, the lenticular lens and image in overlay relationship with one another such that a line parallel to the axial direction and at least one of the bars diverge from a common point to define a bar code offset angle thereby creating a bar code offset angle between the bars of the bar code symbol and the lenticules of the lenticular lens.

39. (currently amended) The method of Claim 38 wherein the lenticules are not parallel to the spaced apart elements of the bar code bars.

40. (currently amended) The method of Claim 38 wherein the lenticules are normal to the spaced apart elements of the bar code bars.

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41. (currently amended) A method of reading a lenticular bar code image, the method comprising:

providing a lenticular bar code image, the lenticular bar code image comprising:  
a lenticular lens having a front surface including a plurality of lenticules oriented along an axial direction and a back surface opposite the front surface; and  
an image including a bar code symbol having bars joined to the back surface of the lenticular lens, the lenticular lens and image in overlay relationship with one another such that a line parallel to the axial direction and at least one of the bars diverge from a common point to define a lenticular bar code angle and, the image including a bar code symbol having bars;  
wherein the lenticular lens and the image are in overlay relationship with one another such that a lenticular bar code angle is formed between the bars of the bar code symbol and the lenticules of the lenticular lens; and  
reading the lenticular bar code image through the lenticules of the lenticular lens with a bar code reader.

42. (currently amended) A lenticular image, comprising:

a lenticular lens having a front surface including a plurality of lenticules oriented along an axial direction and a flat back surface opposite the front surface; and  
an image including a readable product identifier having bars joined to the flat back surface of the lenticular lens, the lenticular lens and image in overlay relationship with one another such that a line parallel to the axial direction and at least one of the bars diverge from a common point to define a readable product identifier angle the image including a readable product identifier;  
wherein the readable product identifiers rotated to define a readable product identifier angle between the bars of the bar code symbol and the lenticules of the lenticular lens.

43. (new) The lenticular bar code image of Claim 1 wherein the lenticular bar code image minimizes distortion of the bar code symbol.

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44. (new) The lenticular bar code image of Claim 1 wherein the lenticular bar code image minimizes distortion of the bar code symbol as the bar code symbol appears through the lenticules.

45. (new) The lenticular bar code image of Claim 1 wherein the lenticular bar code image facilitates non-distorted viewing of the bar code symbol.

46. (new) The lenticular bar code image of Claim 1 wherein the lenticular bar code image facilitates non-distorted viewing of the bar code symbol as the bar code symbol appears through the lenticules.